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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/535,145

12/28/2005

Dayan Rahamin

29637

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67801

7590

04/06/2009

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EXAMINER

DINH, TRINH VO

ART UNIT

PAPER NUMBER

2821

MAIL DATE

DELIVERY MODE

04/06/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/535,145	Applicant(s) RAHAMIN ET AL.	
	Examiner Trinh Vo Dinh	Art Unit 2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01/12/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) 1-21, 26, 35-38 and 45-47 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22, 25, 27-33 and 39-44 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☒ Claim(s) 23, 24 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/15/2008; 01/11/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

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This is a response to the amendment filed 01/12/2009. Claims 1-47 are pending in which non-elected claims 1-10, 13-21, 35-38, and 45-47 were withdrawn from consideration, and claims 11, 22, 27 and 39 are amended. In view of the amendment, the rejections of claims 22-34, 39-44 and the drawings objection have been withdrawn. However, amended claims 11-12 and 22-26 necessitate a further consideration as presented below.

Election/Restrictions

1. Restriction to one of the following species is required under 35 U.S.C. 121:
 - I. Amended claims 11-12 and original claim 26, drawn to an apparatus of a quadrate polarized antenna element, among with other feature, a plurality of electric dipoles and magnetic dipoles arranged at ninety degrees with respect to one another electric dipole and magnetic dipole respectively, and each magnetic dipole shares a common location with respective one of the electric dipole, the sharing a common location comprising being centered on a common point.
 - II. Amended claims 22, 27, 39 and original claims 23-25, 28-34 and 40-44 drawn to an apparatus/a method, among with other things, comprising a sensor type autocorrelator for forming signal autocorrelation matrices for each sensor type of four sensor types and using a steering vector together with a covariance matrix in said eigenstructure-based signal localization techniques.

There is an examination and search burden of these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and /or the prior art applicable to one species would not likely be applicable to another

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species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

The amended claims 11-12 and original claim 26 are directed to species that are distinct from the species originally claimed for the reasons as presented above. Since Applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 11-12 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP 821.03. Thus, **claims 22-25, 27-34 and 39-44 are considered** in the office action.

Election/Restriction

2. This application is in condition for allowance except for the presence of claims 1-10, 13-21, 35-38 and 45-47 directed to a species non-elected in the reply filed on 06/19/2008 and the presence of claims 11-12 and 26 directed to non-elected species by original presentation as discussed above. Applicant is advised to cancel the noted claims. Failure to take action during this period will be treated as authorization to cancel the noted claims by Examiner's Amendment and pass the case to issue. Extensions of time under 37 CFR 1.136(a) will not be permitted since this application will be passed to issue.

DETAILED ACTION

The prosecution of this case is closed except for consideration of the above matter.

Claim Objections

3. Claims 23-24 and 34 are objected to because of the following reasons:

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In claim 23, the term “the sample covariance matrix” has no antecedent basis. The term should be changed to --said at least one covariance matrix--.

In claim 24, the phrase “can be” should be changed to --is-- since "can" is not a positive term of the invention.

In claim 34, line 4, the term “said noise interference signal” has no antecedent basis. The term should be changed to --said noise signal--.

Appropriate correction is required.

Reasons for Allowance

4. Claims 22-25, 27-34 and 39-44 would be allowable because the prior art does not teach or suggest an apparatus/a method, among with other features, comprising a preprocessor having an autocorrelator for forming signal autocorrelation matrices for each sensor type, and a smoother configured for smoothing said autocorrelation matrices, thereby to form at least one covariance matrix comprising spatial spectrum information as defined in claims 22, 27 and 39.

Conclusion

5. Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter

Inquiry

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trinh Vo Dinh whose telephone number is (571) 272-1821 and email address is trinh.dinh@uspto.gov. The examiner can normally be reached on IFW (Increase

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Flexible Work). The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas Owens, can be reached on (571) 272-1662. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 01, 2009

*/Trinh Vo Dinh/
Primary Examiner, Art Unit 2821*